

Australian Standard™

**Components for the protection of  
openings in fire-resistant separating  
elements**

**Part 1: Service penetrations and control  
joints**

**STANDARDS**  
Australia



This Australian Standard was prepared by Committee FP-019, Passive Fire Protection. It was approved on behalf of the Council of Standards Australia on 7 July 2005.  
This Standard was published on 9 September 2005.

---

The following are represented on Committee FP-019:

Architectural Hardware Industry Association  
Australasian Fire Authorities Council  
Australian Building Codes Board  
Australian Chamber of Commerce and Industry  
Australian Industry Group  
Building Research Association of New Zealand  
CSIRO Manufacturing and Infrastructure Technology  
Fire Protection Association Australia  
Fire Protection Association New Zealand

---

### **Keeping Standards up-to-date**

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Web Shop at [www.standards.com.au](http://www.standards.com.au) and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

Australian Standards™ and other products and services developed by Standards Australia are published and distributed under contract by SAI Global, which operates the Standards Web Shop.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at [mail@standards.org.au](mailto:mail@standards.org.au), or write to the Chief Executive, Standards Australia, GPO Box 476, Sydney, NSW 2001.

---

*This Standard was issued in draft form for comment as DR 04101.*

Australian Standard™

**Components for the protection of  
openings in fire-resistant separating  
elements**

**Part 1: Service penetrations and control  
joints**

Originated as AS 4072.1—1992.  
Second edition 2005.  
Reissued incorporating Amendment No. 1 (March 2006).

**COPYRIGHT**

© Standards Australia

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia  
ISBN 0 7337 6847 4

## PREFACE

This Standard was prepared by the Standards Australia Committee FP-019, Passive Fire Protection, to supersede AS 4072.1—1992.

*This Standard incorporates Amendment No. 1 (March 2006). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

The objective of this Standard is to provide the building industry with minimum requirements for the application of fire resistance tests and installation of fire protection systems for service penetrations and control joints through fire-resistant separating elements of construction, to facilitate the required fire resistance of the separating elements.

The previous edition included defined test configurations for the evaluation of penetration sealing systems and control joint sealing systems in fire-separating elements of construction, together with the application of test results. Requirements for standard configurations and permissible variations that do not require assessment have been moved from this Standard to AS 1530.4, *Methods for fire tests on building materials, components and structures, Part 4: Fire resistance test of elements of construction*, in line with the ISO 834 *Fire resistance tests—Elements of building construction*, Standards. As such, this Standard is to be used in conjunction with the appropriate clauses of AS 1530.4.

Clarity has been improved and provision has been made for greater flexibility in the assessment of alternative plastic pipe materials, due to the large increase in the range of plastic pipes available, thus reducing fire testing costs whilst providing for a reasonable level of confidence in the likely performance of the pipe fire protection systems.

This Edition includes advice on documentation of installations, to facilitate correct installation and record keeping, which has been identified as a significant problem in buildings constructed during the last 10 years.

This Standard will be referenced in the Building Code of Australia (BCA) by way of BCA 2006 to be published by 1 May 2006, thereby superseding the previous edition, AS 4072.1—1992.

The requirements for maintenance of service penetrations and control joints are not covered in this Standard.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

*This Standard incorporates a Commentary on some clauses. The Commentary directly follows the relevant clause, is designated by ‘C’ preceding the clause number and is printed in italics in a panel. The Commentary is for information only and does not need to be followed for compliance with the Standard.*

## CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE .....	4
1.2 APPLICATION .....	4
1.3 NORMATIVE REFERENCED DOCUMENTS .....	4
1.4 DEFINITIONS .....	4
SECTION 2 DESIGN REQUIREMENTS	
2.1 GENERAL .....	8
2.2 MATERIALS .....	8
2.3 MOVEMENT .....	8
SECTION 3 DETERMINATION OF FIRE RESISTANCE AND CLASSIFICATION OF PENETRATION SYSTEMS	
3.1 FIRE RESISTANCE TESTING .....	9
3.2 CLASSIFICATION .....	9
SECTION 4 VARIATIONS PERMITTED SUBJECT TO FORMAL OPINION	
4.1 GENERAL .....	10
4.2 PREPARATION AND PRESENTATION OF FORMAL OPINIONS .....	10
4.3 VARIATIONS PERMITTED SUBJECT TO A FORMAL OPINION .....	11
4.4 METAL PIPES .....	11
4.5 ELECTRICAL AND COMMUNICATION CABLES .....	12
4.6 PLASTIC PIPES .....	13
4.7 CONTROL JOINTS .....	15
4.8 MISCELLANEOUS PENETRATING SERVICES .....	16
4.9 MULTIPLE PENETRATION SYSTEMS .....	16
APPENDICES	
A COMMENTARY .....	17
B DOCUMENTATION .....	22
C PHYSICAL PERFORMANCE OF CONTROL JOINT SEALS .....	26
BIBLIOGRAPHY .....	28

## STANDARDS AUSTRALIA

**Australian Standard****Components for the protection of openings in fire-resistant separating elements****Part 1: Service penetrations and control joints**

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard sets out minimum requirements for the construction, installation and application of fire resistance tests to sealing systems—

- (a) around penetrations through separating building elements that are required to have a fire resistance level (FRL) or, if applicable, a resistance to the incipient spread of fire; and
- (b) at control joints between building elements that are required to have a fire resistance level (FRL).

## NOTES:

- 1 Explanatory notes and comment on the testing regime are included in Appendix A.
- 2 This Standard does not address smoke leakage through sealing systems around penetrations and at control joints. Other Standards, such as AS/NZS 1530.7, may be used for evaluating the potential for smoke spread.
- 3 The regulatory authority may require some evidence of compliance of the sealing systems installed in a building. Should this be the case, the recommended practice is given in Appendix B.

**1.2 APPLICATION**

The Standard is intended to complement the fire protection requirements of the *Building Code of Australia* (BCA) and to be read in conjunction with the appropriate clauses of AS 1530.4, which provides methods for determining the fire resistance of service penetrations and control joints.

**1.3 NORMATIVE REFERENCED DOCUMENTS**

The following referenced documents are indispensable for the application of this Standard. The latest edition of the referenced document (including any amendments) applies.

NOTE: For a list of informative documents referred to in this Standard, see Bibliography at the end of the document.

## AS

- |        |   |
|--------|---|
| 1530   | Methods for fire tests on building materials, components and structures |
| 1530.4 | Part 4: Fire resistance tests of elements of building construction      |

## ABCB

- |     |                            |
|-----|----------------------------|
| BCA | Building Code of Australia |
|-----|----------------------------|

**1.4 DEFINITIONS**

For the purpose of this Standard, the definitions below apply.